

Marshall

JCM 2000

TSL100 & TSL122 *TRIPLE SUPER LEAD* *Valve Amplifiers*

Marshall Amplification plc
Denbigh Road, Bletchley, Milton Keynes, MK1 1DQ, England
Tel: (01908) 375411
Fax: (01908) 376118

Web Site - <http://www.marshallamps.com>

*Whilst the information contained herein is correct at the time of publication,
due to our policy of constant improvement and development, Marshall
Amplification plc reserve the right to alter specifications without prior notice.*

Nov '98

Handbook

WARNING! - Important safety instructions

- A. **ALWAYS** fit a good quality mains plug conforming to the latest B.S.I. standards where necessary (UK only).
- B. **NEVER** attempt to by-pass the fuses or fit ones of the incorrect value.
- C. **NEVER** attempt to replace fuses or valves with the amplifier connected to the mains.
- D. **DO NOT** attempt to remove the amplifier chassis, there are no user serviceable parts.
- E. **Refer all servicing to qualified service personnel.** Servicing is required when the apparatus has been damaged in any way, such as the power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally or has been dropped.
- F. **NEVER** use an amplifier in damp or wet conditions.
- G. **ALWAYS** unplug this apparatus during lightning storms or when unused for long periods of time.
- H. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles and at the point where they exit from the apparatus.
- I. **DO NOT** switch the amplifier on without the loudspeaker connected.
- J. **ENSURE** that any extension cabinets used are of the correct impedance.
- K. **PLEASE** read this instruction manual carefully before switching on. **Follow all instructions and heed all warnings.**

WARNING : This apparatus must be earthed!

WARNING : Do not obstruct ventilation grille and always ensure free movement of air around the amplifier!

USA ONLY - DO NOT defeat the purpose of the polarised or grounding type plug. A polarised plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. When the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

KEEP THESE INSTRUCTIONS

Introduction

The Triple Super Lead series of 100 watt amplifiers takes the acclaimed formula of the groundbreaking Dual Super Lead series and places an immense amount of control and flexibility at your fingertips.

As the name implies, the Triple Super Lead is a three channel amp. Each channel has a full range of independent controls for gain, volume and EQ functions, to maximise its sonic qualities and balance that channel against the others. Further to that, the master section has the capability to enhance and modify the sonic palette even further by providing controls for reverb, fx loop mixes, presence and deep EQ, virtual power reduction and even muting the power amp output for silent recording via the inbuilt speaker emulating DI circuit.

Although the three channels of the TSL are named 'Clean', 'Crunch' and 'Lead', DO NOT let these names mislead you into thinking that you will only get those functions. Alternatively, think of the TSL as three classic valve amplifiers in one. As you would expect from independent amps, each has a wide range of tones, depending on how you set it up, and you are able to footswitch between them. Read on and we will take you through what each channel can do.

Because of the immense functionality of the TSL, it may be that you find, at first, that the front panel control layout is, perhaps, slightly daunting. Do not worry, a great deal of thought has gone into the layout of the controls and, with the help of this manual and a little patience from yourself, we feel that you will soon learn how easy your TSL actually is to use.

WHAT YOUR TSL WILL and WON'T DO !

Before going into what your TSL amp can do, let's discuss what it won't do. Firstly, remember that your tone comes from you and nobody, or nothing, else. Your technique is what makes you the player that you are, nobody else in the world sounds exactly like you. That's how special you are! Having the best gear in the world is not going to make you play like anybody else but what it will do is help you to achieve your aims, by expanding your creative possibilities and generally making life a lot easier.

Likewise your guitar, pickups and strings have an immense influence on your final tone. Guitars come in (basically) three different flavours - Single coil pickups over 25 1/2" scale length (names usually start with the letter F), Humbucking pickups over a shorter scale length, usually 24 3/4" (names usually start with a G) and thirdly a combination of humbuckers over a 25 1/2" scale length. All these guitars sound different and although the choice is personal, one type will do a better job than another depending on what type of music you want to play.

Also different woods and build techniques have a very significant affect on the final tone, i.e. most Humbucking guitars use a lot of mahogany and a glued in neck, whilst most single coil guitars woods of a totally different resonance (alder, maple, ash, etc) and a separate bolt on neck construction.

Despite what some other amp manufacturers may claim about their products, no amplifier can make one type of guitar sound like a totally different type of guitar.

The TSL100 and TSL122 are no different in this respect !

What we would like to claim however (and virtually guarantee), is that your TSL100 will maximise the potential of your guitar in a way that you may never have thought possible and without a doubt will spur your musical creativity onto new horizons.

5 Way Foot Controller

Your TSL100 or TSL122 come supplied with a 5 way foot controller for channel, reverb and FX loop switching. It comes complete with an 8 metre (approx 26 ft) long lead ending in a 6 pin DIN plug to connect into the footswitch connector on the rear panel of your amplifier, (see rear panel details).

Once connected the controller will give you instant access to and visual indication of each of the 3 channels, plus reverb on/off and fx loop on/off. To allow proper operation it is important to remember that both channel mode pushswitches on the front panel (located between the Clean and Crunch / Lead channels) MUST be pushed IN. As the FX loops are switched entirely out of the amplifier circuit until an FX device is plugged into either of the FX loop jack sockets, the FX switch and LED indicator on the foot controller are completely inoperative until the loops are connected. Unless this is done the FX LED will not light up, no matter how many times the switch is depressed!

One benefit of having a foot switched FX loop is that it can be used as a secondary master volume if no FX are connected. This is achieved by inserting a shorted dummy jack plug into the Loop A Return jack socket to access the loop circuitry, switch OFF the FX footswitch and set your loudest required volume on the individual channel master volumes. Now switch the FX footswitch ON (LED glows red) and set your quieter volume using the FX Mix controls (Clean Mix for Clean channel, Crunch / Lead Mix for Overdrive). Remember that these controls will now work back to front to a normal volume control, i.e. anticlockwise is loudest (same as normal signal) and clockwise is quietest. Now you can toggle between these settings by using the FX footswitch.

CLEAN CHANNEL (Please refer to diagram A, Page 6)

1. Mode Select

To access the Clean channel (if the foot controller is NOT connected) - release the Clean - OD1/OD2 pushswitch. If the footswitch IS connected both mode switches MUST be pushed in, and then press the Clean pushswitch on the foot controller. The Clean LED (green) on the front panel and the clean LED on the footswitch should now both be illuminated.

As you can see, the controls available in the 'Clean' mode are: Gain, Volume, Treble, Middle, Bass rotary controls and Mid Boost pushswitch (preamp) and Reverb, FX Mix, Presence rotary controls and Deep pushswitch (at master level).

Two more pushswitches are available, but remember these affect the whole amplifier as well (these are marked PowerAmp V.P.R. and Output Mute).

FUNCTIONS

2. Gain Control

As with most amplifiers, this controls the sensitivity of the input section of the preamp. At low settings the preamp will be ultra clean with a very bright character. As you turn the control up, the sound will become fuller and warmer (some may say 'fatter'), with a more pronounced bottom end. Set at the top end of the control's range (depending on the type of guitar and pickups, etc) a very warm sustaining breakup will start to occur, depending on the EQ settings, as described below.

3. Volume Control

This sets the amount of signal generated by the preamp out into the power amp section. When using very clean 'Gain' settings, you may want to turn this up higher than when using higher 'Gain' settings to achieve a suitable stage sound level. The FX loop comes after this control, which will help you balance the FX level with the other channels.

NOTE : Many different 'clean' amp textures can be created by balancing the 'Gain' and 'Volume' controls.

4. Mid Boost Pushswitch

This works in conjunction with the passive EQ controls by disconnecting the Mid control from the circuit, then reconfiguring the way the Treble and Bass controls work. One way of using this function is to set the Gain control high, Treble and Bass midway and with sufficient output volume setting, you will be rewarded with a very singing, sustaining Blues / Jazz Rock lead type tone, as characterised by many Chicago, Texan and Californian players, particularly those using more vintage type amps. This tone can then be modified by using the Treble, Bass and Presence controls.

5. Treble, Middle, Bass Controls

These are the time honoured passive type of network that help make a guitar amp what it is. By being before the gain stages these controls work in a slightly different way to being after the gain stages, as you would normally find on a distortion type preamp (and as pioneered by Marshall). By instead of processing an already formed sound, the EQ helps form the voice of the sound. For instance, turning the Mid control down will clean up the body of the tone and help give the characteristic 'twang' of country music (coupled with a TxIxcater of course !).

Also turning the Mid down will help when undertaking funkier rhythm work, to enable the treble to cut through and not muddy up the frequencies needed for the lead instrument(s). Obviously, altering the Treble and Bass controls will have the affect of tailoring the high and low frequencies in your tone. When playing at high levels (gain as well as volume) turning the Bass down will help maintain note definition and aid projection. Try turning the Treble down and Mid up a bit for the solo in that warm romantic ballad, with the right amount of gain, you will be rewarded with some sweet clean sustain.

Master Section Controls

At the other end of the panel you will find the 'Clean' master section with the following controls :

6. Reverb Control

This will vary the inbuilt Accutronics spring reverb from a faint shimmer to deep and luxurious, this will affect the 'Clean' channel only.

7. FX Mix Control

When using the extensive FX looping facility on the rear panel, this control will adjust the FX mix for the clean channel only, from totally dry (0) through varying degrees of parallel mix (1-9) to a full series connected loop (10). For more information see FX Loop section

8. Presence Control and Deep Switch

The presence control will boost the upper mid / lower treble part of the tone giving it more up-front brilliance, great for cutting through overactive cymbals. The Deep switch gives the tone a very resonant texture as it interacts with the low frequencies of the loudspeakers. This is great for filling out the bottom end at low volumes but will also give a resonant but controlled growl to the tone at high volumes.

9. V.P.R. and Mute Pushswitches

Please see later section.

CRUNCH CHANNEL (Please refer to diagram B, Page 7)

1. Mode Select

To access the crunch channel (if the foot controller is NOT connected) - front panel pushswitch marked 'Clean - OD1 / OD2' should be depressed and the one marked 'OD1 / OD2' should be released. If the foot controller IS connected both switches MUST be pushed in and then press the Crunch switch on the foot controller. The Crunch LED (yellow) on the front panel and the Crunch LED on the foot controller will now be ON.

The controls available in the 'Crunch' mode are Gain, Volume, Treble, Mid, Bass rotary controls and Tone Shift push-button (on the preamp section), Reverb, FX Mix, Presence rotary controls and Deep pushswitch on the master. These are also shared with the 'Lead' channel.

FUNCTIONS

2. Gain Control

Again this controls the input sensitivity of the channel but with the effect of being capable of much more gain and hence more dramatic distortion. At low settings, the channel is relatively clean (although darker in tone than the clean channel) and makes a good alternative for gentler, bluesy style solos. With a bit more gain the tone becomes more aggressively traditional Marshall rock with the emphasis on chunky power chords. Take the gain control to the limit and we enter modern high gain crunch territory, with probably more gain and dynamics than other manufacturers would put on their lead channels!

3. Volume Control

Again this controls the balance and level of the crunch channel against the rest of the TSL.

4. Tone Shift Pushswitch

This takes the traditional, slightly mizzly Marshall passive post distortion EQ network and reconfigures it to produce a more mid scooped tone. Whilst mid-scooped tone is usually associated with 'Metal', please do not be afraid to experiment with the shifted tone settings even if metal is not your thing, as it is very useful in deepening the tone at low volumes.

5. Treble, Middle, Bass Controls

As stated above, these are the traditional Marshall post distortion EQ controls and as such affect the character of the distorted signal. It is suggested that initially you set the controls midway and experiment from there, rather than the 'everything on 10' method favoured for the earlier non-master Marshall amps. Remember, increasing the treble is going to make the distortion more 'fizzy' and 'cutting', whereas increasing the mid will make the distortion more fluent and sustaining but probably not as dynamic (in the modern sense). Try what you will, there are many textures to discover.

6. Master Section Controls

As with the Clean channel the Reverb, FX mix, Presence, and Deep functions can be adjusted independently of the Clean channel but remember these controls are also used in conjunction with the Lead channel.

LEAD CHANNEL (please refer to diagram C, Page 8)

1. Mode Select

To access the Lead channel - both front panel 'mode select' pushswitches must be pushed in (with or without the foot controller connected). If using the foot controller press the Lead switch. The Lead LED (red) on the front panel and on the foot controller will now be illuminated.

FUNCTIONS

As you can see the control line up in the 'Lead' mode is identical to the 'Crunch' mode, except now you are using the other row of controls. Operation of the 'Lead' channel is exactly the same as the 'Crunch' channel, but with a lot more gain and compression to play with. This channel will still clean up with low gain settings or from the guitar's volume control. BUT, when wound up the dynamics and response of this channel will follow your every move. When speed picking the amp will follow every note without blurring and when playing slow legato runs, the amazing sustain will bloom into controlled feedback hanging on for as long as you want. Experimenting with the Gain, Volume and EQ controls will yield an extremely wide palette of tonal textures.

OTHER FRONT PANEL CONTROLS

In the section marked 'POWER AMP' there are two pushswitches, one marked 'V.P.R.' and the other marked 'Output Mute', these work in the following way:

V.P.R. - Virtual Power Reduction

When this switch is depressed, the power amp circuit is modified allowing it to emulate a lower powered amp, approximately 25 watts. This is done between the phase splitter (inverter) valve and the output valves. In this way, as compared to other methods of power reduction, all four output valves remain running and connected in pentode operation, thereby all valves wear evenly and maintain the full toneful dynamics of that type of connection.

Output Mute

By the nature of the 'V.P.R.' circuit, we can now turn off the signal to the output valves. As the speaker emulating DI output is connected to the same place, this enables the TSL to be DI'd for silent recording, yet maintain the compression and harmonics of a push-pull valve stage.

Power and Standby Switches

These are a very important part of your valve amplifier and to help maximise the life of your output valves. Please remember these simple but important rules :

1. Always turn the Power switch on first, wait for at least a minute, 2 if possible. This enables the valves to reach their working temperature before the HT voltage is applied.
2. Then turn on the Standby switch. This applies the HT voltage to the valves and makes the amp work.
3. When stopping for a break, turn Standby switch off only. This allows the valves to remain at their working temperature (where they are happiest !) and you do not need to go through the warm up cycle again when you are ready to resume playing.
4. At the end of the gig turn the Standby switch off first, wait a few seconds and then turn the Power switch off.

Another important rule to remember, to help prolong valve and amplifier life is after turning off at the end of a gig, let your amp cool down before moving it and certainly before putting into the back of the truck on a cold night. Remember this and your valves (tubes) will love you for it.

TSL100 & TSL122 REAR PANEL (refer to diagram D, Page 9)

The TSL rear panel contains a number of functions to not only make the amp work but also to expand its versatility.

1. Footswitch Connector

The supplied foot controller is connected to the amplifier via this 6 pin DIN socket to allow remote switching of Channels, Reverb and FX functions. See section on 5 way foot controller for details.

2. Effects Loop A & Effects Loop B

The TSL supports two effects loops, which can be used in a variety of ways.

Loop A when used on its own, is the master loop for the amp and will channel switch from clean to overdrive when you change channels, allowing you to set the individual mix from the front panel Mix controls.

Loop B is the specific loop for using effects on the overdrive channels (Crunch / Lead) and if used on its own will only provide effects when on these channels, leaving the clean channel totally dry.

When Loop B is in use Loop A becomes available for use solely on the Clean channel. This means that you can have two totally different FX systems, one for clean and one for overdrive.

Each loop has its own 'loop level' pushswitch, enabling you to select the right send and return levels to suit whatever effects system you are using. With the switch 'out', the level within the loop is high (suitable for most pro rack fx). With the switch 'in', the level within the loop is set at a much lower signal level (suitable more for floor pedals or lesser spec'd rack units).

Note: The loops are in parallel mode until the mix controls are at 10 when the loop converts to series mode. Also, remember that as the loops are between the preamp and the power amp, this is NOT the place for distortion type effects units.

3 & 4. Loudspeaker Outputs & Impedance Select

There are three loudspeaker jacks provided on the TSL amps. One is dedicated to 16 Ohm use only and is marked as such. This is for use when using either a single 16 Ohm cabinet (Marshall 4x12" of course!) on the TSL100 head or the internal speakers on the TSL122 combo. Using this socket negates the use of the other sockets! The other two

sockets are marked 4 & 8 Ohm Parallel Jacks and are connected to the 4 & 8 Ohm Impedance selector. These are used when using either non-Marshall cabinets of a different impedance (either 4 or 8 ohms) or when using multiple speaker systems (i.e. when using two stacked Marshall 4x12" cabs or when using an extension cab with the TSL122 combo). Remember to set the Output Selector to the appropriate setting! (item 4) i.e. 2 x 16 Ohm loads = 8 Ohms, 1 x 4 Ohms = 4 Ohms, 2 x 8 Ohms = 4 Ohms. If in doubt consult your Marshall dealer.

WARNING! - Under no conditions operate your TSL amplifier without a loudspeaker type load connected, otherwise costly damage may result!

You may notice that the TSL122 2x12" combo has two different types of loudspeaker (1 x Marshall Celestion Vintage and 1 x Marshall Celestion Heritage), this is because combining the characteristics of the two speakers helps reproduce the unique tone capabilities of this amp. We care about your tone!

To further extend the TSL122 combo's capabilities there is a matching 2 x 12" cabinet - the TSLC212. This cabinet is the perfect match for the combo as it features a similar speaker configuration.

5. Emulated Line Out

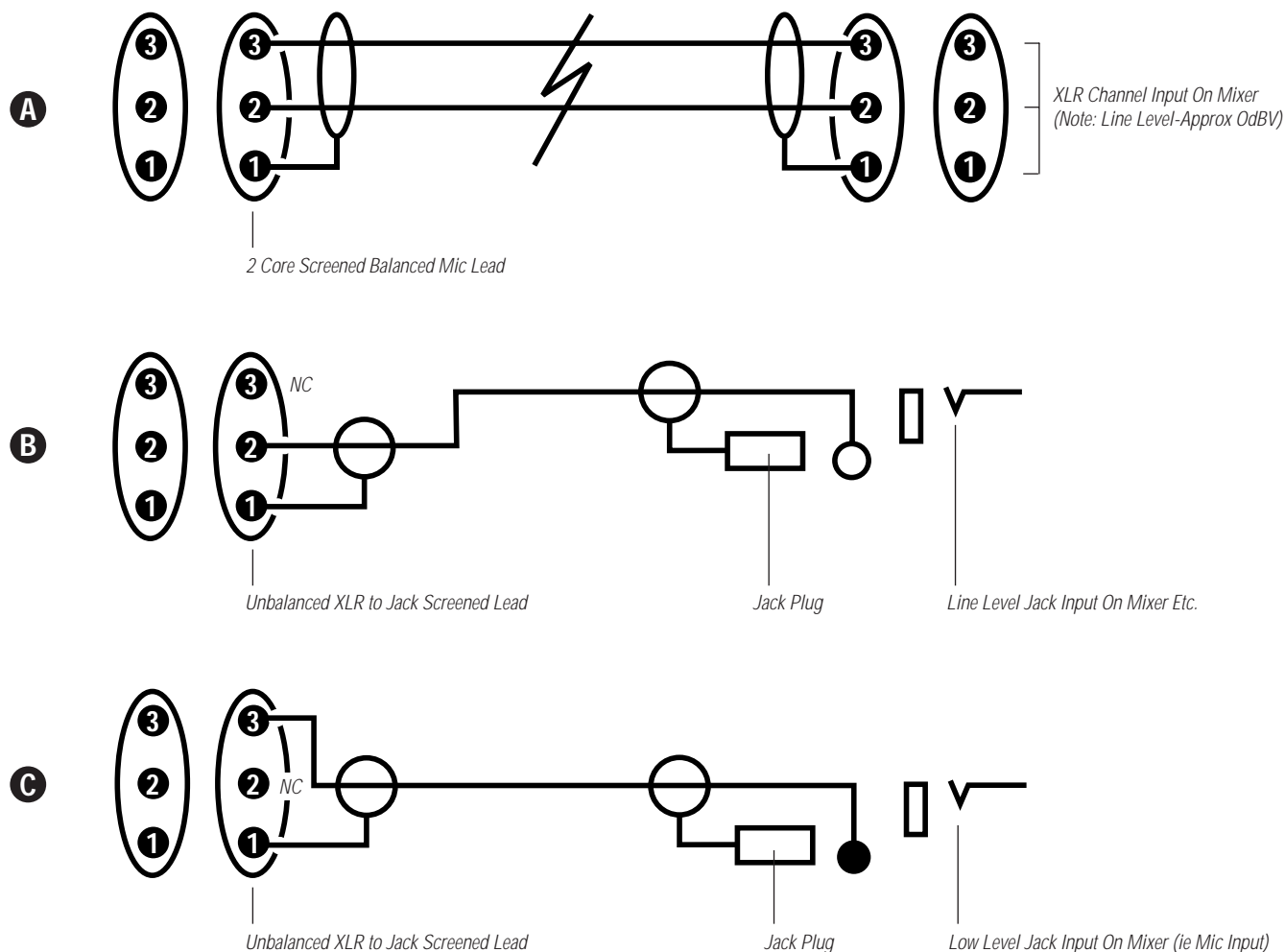
This XLR connector provides a superb loudspeaker emulated output signal, suitable for either connecting into a PA system or for direct recording, without resorting to using microphones or external DI units. As stated earlier, by using the "output mute" function, silent recording can be accomplished, enabling late night project studio sessions to be carried out with the minimum of stress. This socket can be connected in a variety of ways. See diagram E.

6. Mains Input, Mains Fuse, HT Fuse

The mains input and fuse provide and protect your amplifier with the incoming electric power, enabling it to operate. Please see specifications (and amplifier rating) for more details. If in doubt consult your Marshall dealer. The HT fuse protects your amplifier from an internal fault with the HT voltage supply. If this blows, it would probably indicate that an output valve has failed. If this happens, consult your Marshall dealer or service centre, regarding replacement and service.

WARNING! For your protection and safety, your amplifier must be serviced by qualified personnel only.

Diagram E - Line Out XLR Connections



SPECIFICATION

Output power	(typical) 120 watts at 5% THD into 4/8/16 ohms.
Mains input	117V ~ 60Hz or 230V ~ 50Hz (standard) - others to special order. (To alter amplifier for different mains voltage specification to that delivered (i.e. 120V to 230V etc), please contact your country's Marshall distributor or main service centre.)
Mains power input	375 watts.
Mains fuse	T4A - 117V or T2A - 230V
HT fuse	T1A
Valve (Tube) complement	4 x ECC83 (12AX7) - preamp and phase splitter (inverter). 4 x EL34 - output. Marshall - Svetlana fitted as standard.

WARNING!

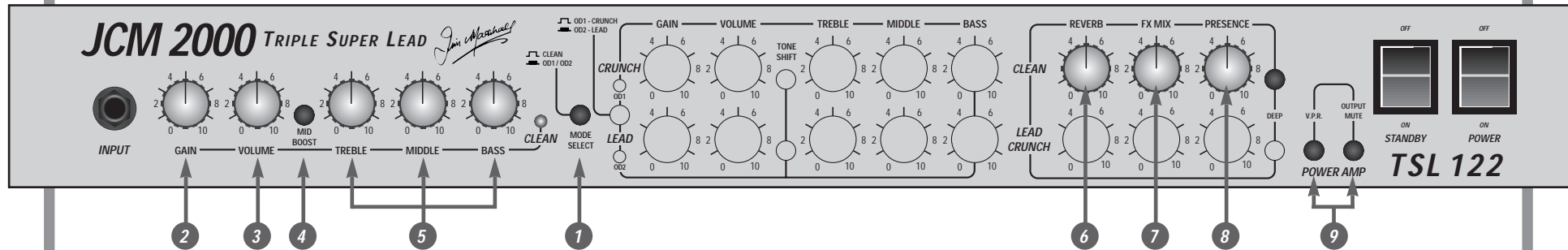


WARNING : RISK OF HAZARDOUS ENERGY!
AVIS : ENERGIE ELECTRIQUE DANGEREUSE!

If the loudspeaker is disconnected a high voltage can be present at these output terminals. Operation in this manner can damage your amplifier, therefore ensure that the loudspeaker is properly connected.

Diagram A - Clean Channel

Front Panel - TSL122 Combo - Clean Channel



Front Panel - TSL100 Head - Clean Channel

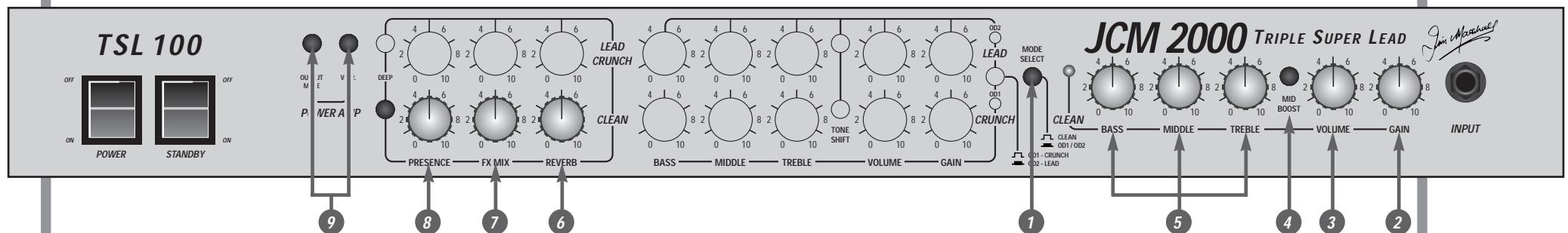
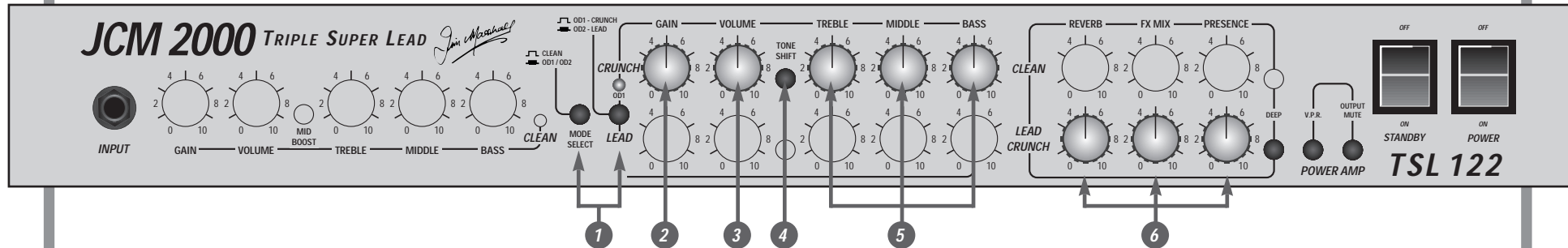


Diagram B - Crunch Channel

Front Panel - TSL122 Combo - Crunch Channel



Front Panel - TSL100 Head - Crunch Channel

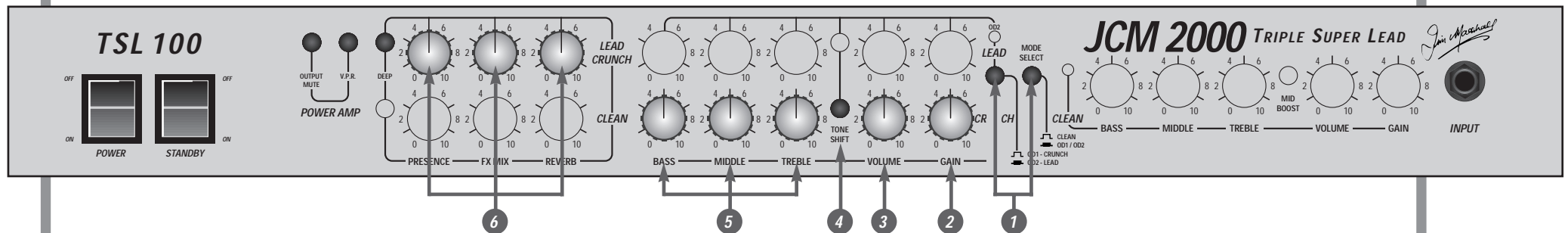
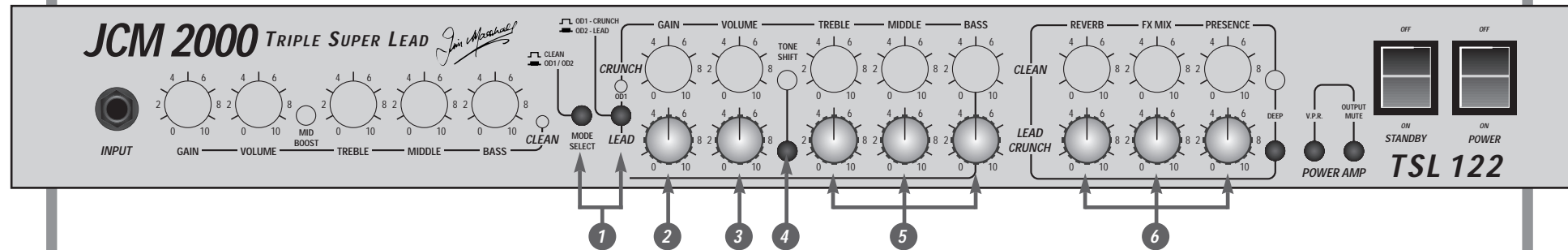


Diagram C - Lead Channel

Front Panel - TSL122 Combo - Lead Channel



Front Panel - TSL100 Head - Lead Channel

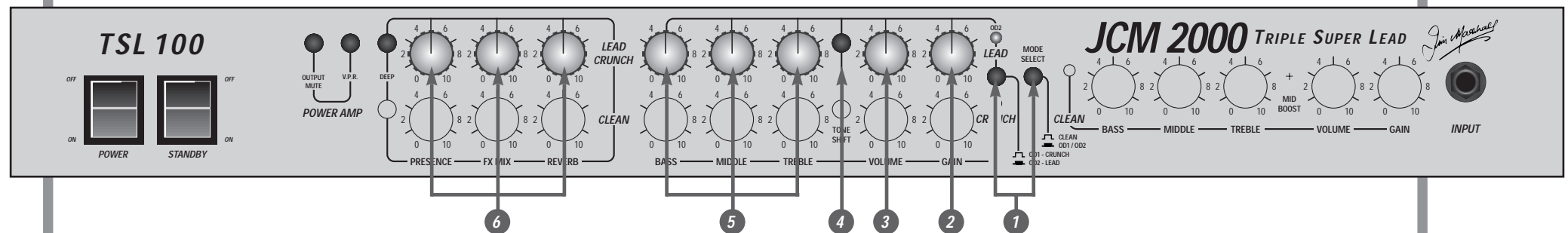
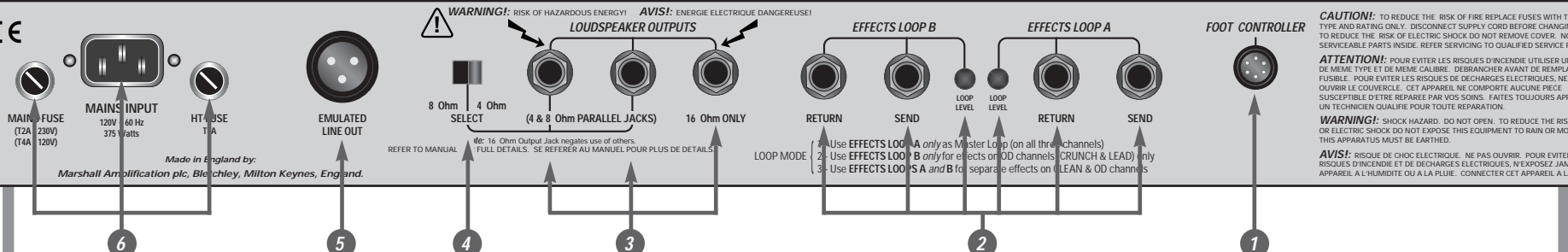


Diagram D - Real Falls

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ar Panel - TSL100 Head

